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a hundred years ago was in the midst of the turmoil of the French Revolution. The eighteenth century closed in what might be called an educational era of good feeling, a reign of peace. But as we stand in the closing years of the nineteenth century, what subject gives rise to more discussion, shows more difference of opinion, and greater variety of professional judgment, even, than the subject of education? Its scope has been vastly widened with the century. It reaches farther back and farther forward, and comprises an infinitely larger area of the present than it did a century ago. It has become the interest upon which the civilized world lavishes more money than upon any other; so that it has assumed great economic importance. It has come to be believed in as the one potent means of national regeneration and of national salvation. If it be so potent as men somewhat thoughtlessly say, if it be one half so vital to the present and the future, then surely no amount of thought, no amount of discussion, no amount of investigation is too great to lavish upon it. Nor can anyone doubt for a moment that the present condition of unrest, of agitation, of uncertainty, but of inquiry, of faith, of endeavor, of enthusiastic hope and great determination to know the best and to do it is far more promising than the peaceful stagnation of a century ago.

THE PROPER LIMITATION OF ELECTIVE WORK IN SCHOOL AND COLLEGE

C. D. SCHMITT

To one brought up under the influence of the old college with its fixed curriculum and indoctrinated with the idea that excellency in Latin, Greek, and mathematics constituted the highest ideal in scholarship, it may be difficult to eliminate the personal equation and to bring himself to a proper consideration of the question involved. The writer realizes the tremendous change that has taken place within the last twenty years in the abolishment of the prescribed courses in many schools and colleges and the offering in their stead a variety of courses from which the candidate may select either the one most pleasing to his fancy or the one best adapted to his actual needs and mental equipment. The pertinent question is whether in escaping the Scylla of no electives we have not been wrecked upon the Charybdis of all electives. We have no desire to restrict the freedom of the individual who is capable of knowing what freedom is and how to use it, nor

to issue a Sinaitic proclamation of "thou shalt and thou shalt not," but it seems necessary to consider with care the steps already taken and to be sure that the opening of the gates of election has not been too wide.

The professional and purely technical schools and colleges are to be differentiated from what is known as the schools and colleges of the liberal arts. In the former the courses appear to be definitely fixed — cast iron, we might say. In law, medicine, dentistry, theology, pharmacy, engineering, and other schools there are practically no electives, except occasionally a choice of a modern language in the engineering course. Certain studies are regarded, and rightly too, as absolutely essential to the successful pursuit of those different professions. There are so many things that the student *must* know that there is little or no time left for the other things that he *might* know and which doubtless it would be very pleasant to know. If the work in these professions is required to be based upon a bachelor's degree (and may the time soon come when this will universally be the case), then the student will have had the choice of electives in the attainment of his previous college or university degree. Once the student has entered upon the definite study of his profession, his entire efforts are to be concentrated along that line. The candidate for the medical degree cannot substitute Greek for anatomy nor algebra for obstetrics. The law student cannot offer geology for Hale on Torts nor physics for equity and jurisprudence. There seems to be a legitimate propriety in this, and the wisdom of such a fixed course is seldom questioned.

Having eliminated the institutions devoted to professional and technical work, we come to the main topic: "The Proper Limitation of Electives in the School and College." That all of our better colleges and universities offer various electives is certainly true, but the scheme of election in academies, high schools, and preparatory schools is not so universal, and in many of them does not exist at all. It may be difficult to draw the dividing line between school and college, for the last year in the best academies is better than the freshman year in some colleges. It is not the province of this paper to discuss what studies properly belong to each. We will, however, understand that the school extends through four years and the college four from freshman to senior.

Let us keep clearly in mind the function of the school and college, which is to educate human beings, to fit them for solving the problem

of life in a way best for themselves and others. Education is "power-getting," the furnishing of energy for the successful carrying out of the plans formed by the machinery of the mind. The young mind is to be trained to think, to perceive and to judge, to discriminate and to reason with as much logical exactness as possible. Education must furnish him with material to develop the mind and at the same time with useful knowledge. He must be taught both what to do and how to do it, and to do it in the best way. One object, and frequently under the old dispensation, the only object, is culture, but culture is not all. The individual must be trained to think and investigate for himself. He must be fitted for the active pursuits of life, and to this end the culture side must not be developed entirely at the expense of the practical or technical side. The technical education of no one should be barren of literary culture, and the literary training of no one should be devoid of all practical instruction. This ideal is, however, seldom attained. The old strict classical training was too much along one line, though for the most part it produced men of high culture and polished scholars, and it remains true today that these graduates are seldom overshadowed by the more generally educated man of the present. Still, that training left part of the individual undeveloped, and it has been the aim of the newer education, by a freer introduction of the sciences and scientific thought and training, to obviate this one-sidedness and to give to the individual a more perfect and harmonious development. We do not wish even to appear to underrate the value of a classical training, but to express the opinion that there are some sides of human nature which such training does not and cannot reach. But, on the other hand, in trying to supplement the classical training with a scientific or technical one, there has been in recent years on the part of some a tendency to go to the extreme in the other direction. Instead of supplementing it has been rather a supplanting, and it seems that a word of caution may be of worth.

No one means to say that all individuals are alike, and that the training that is best for one mind is best for all. We do not consider a collection of men in a school or college as so many blocks of wood, out of which are to be made so many vessels, all modeled after the same pattern. It would not be reasonable to say that the mental development of every one shall be brought about in the same way and to the same degree. No two are constituted, either physically or mentally, alike. This dissimilarity in mental nature and inclination seems, then, to necessitate a certain amount of freedom, but the

question arises as to whether there are not certain lines of mental activity along which training can be pursued whatever may be the peculiarities and inclinations of the individuals. Are there not certain branches of instruction which can be regarded as fundamental and which ought not to be omitted from any curriculum? Considered psychologically, and from a true educational standpoint, it seems that there are four such lines of activity—namely, language, history, mathematics, and the sciences.

Language is placed first as being preëminently essential to the correct and successful training of the individual. Everyone ought to have a certain mastery of his own tongue, whatever his calling is to be. An acquaintance with its origin, history, development, and changes will confer a power of recognized value and will give to the possessor a masterful influence over those not so equipped. No one knows when he may be called upon to express himself in public and he cannot do this with clearness and force if he has had no training. Whether this study of the mother tongue can be well done without a knowledge of other languages, especially the Latin, is to be doubted, and this must be considered later.

In the second place, the educated man must know the history of his own country, the origin and growth of its institutions and their development in politics, religion, and society. The value of true citizenship cannot be appreciated by one who is ignorant along these lines. As no nation is isolated from all others, so this study of one's own land naturally demands a certain amount of investigation concerning other nations—at least concerning those which are contemporary.

Next as a necessary factor we would place mathematics, notwithstanding the fact that some institutions and some teachers are more and more inclined to make all mathematical work beyond arithmetic elective, mainly on the ground that so many do not like or care for mathematics. The disciplinary value of mathematical training is well recognized, and the part that it plays in bringing the powers of the individual into logical order and causing them to work along systematic lines is beyond question. Besides this, the facts of science and the various relations therein existing must be measured and systematized, as it were, and for this work mathematics are absolutely essential.

Finally we place the sciences in the list as an undisputed factor in the curriculum of our schools. Not to take into consideration the truths of nature as exhibited in the different sciences would be to omit

from our education one of its most practical features. "Science," says Huxley, "is nothing but trained and organized common sense."

If it be granted that instruction along these four lines should be embodied in every system of education, the question arises as to which of these lines can be successfully pursued in the secondary and preparatory schools and how much. Also, which of them shall be prescribed and which made elective.

Personally I am nearly ready to agree with Commissioner Harris that there be no electives in the preparatory schools. The plea that these young students should be allowed full liberty in selecting just the studies they like is not sound pedagogy, and must eventually result in more harm than good to the majority so electing. To what extent is the young boy or man who is in these schools competent to select for himself the studies which he ought to have? Certainly he can select what he likes, but common experience or common sense ought to teach us that what a boy likes is not always the best for him. If a boy is backward in a certain study or does not get along well in another, or despises a third, then, I suppose, he ought at once be allowed to get rid of such dislike. Rather does not his backwardness show that he needs just the more training in that direction? Often the student who asks what is the good of linguistic training is the one most in need of it, and the one who says he can do nothing with mathematics is the one who most needs the training which arises therefrom. "A proper education will develop that which is deficient and stimulate that which is dormant, guide that which is vigorous, and restrain that which is abnormal in tendency." The attendant upon the schools is for the most part not prepared to say what he is best fit for. He is not ready to choose his future occupation, and even if he is, who will be so bold as to say that the general education proposed will not the better fit him for this occupation. Shall the wisdom and experience of men who have made a life study of the details of education be exchanged "to suit the inconsiderate vagaries of inexperienced school-boys?" If the school is to be the end of his education, as is the case with so many, should we not for that very reason insist that he be given this prescribed course which the experience of past generations has shown to be wise, wholesome, and good?

But to return to the original question: Shall each of these four main lines of mental activity be taught in the schools, or shall there be a division and some be left until the college course? We answer that all ought to have a place in the schools, and that if there must be

electives, let them be from among the different subjects comprised in the four divisions and not from among the divisions themselves.

The English language and its literature should be compulsory. It is doubtful if the present age will consent to the inserting of Latin as a compulsory study in the course, so we propose that in addition to English there be an elective from Latin, Greek, French, and German. This will not be in opposition to the scheme proposed but in direct harmony with it. Compulsion in the sense that an additional language will be required, but elective in the fact that one of four languages may be chosen.

In history, that of the United States should be compulsory. Here again if electives are asked for, the same plan as in the preceding paragraph is to be followed. If United States history be studied for one year, three years will be left and the electives in those years are to be limited to kindred subjects. Compel the pupil to study history, but let him elect from English, Grecian, Roman, French, and German, and if any special preference be shown for one above another, let him pursue the one of his choice. But to offer an election between history and drawing, for instance, would destroy the plan, and, moreover, would seem to be at variance with correct pedagogical thought.

In the third division, that of mathematics, there seems to be no place for an election, and the scheme proposed would require algebra and geometry to be studied by all pupils. In the high school at Newton, Mass., where mathematics was made elective, only 30 per cent. elected algebra and 23 per cent. geometry. May the hope be expressed that our association is not ready to approve of such a course.

In the sciences the need for making some one compulsory does not seem to be as pressing as in the other divisions. Here the limitation as to the choice might be removed, and the pupil might elect from physiology, botany, physics, chemistry, physiography, anatomy, meteorology, and probably some others. But the election must be a science. Of course all these different sciences could not be taught in the four years, but elementary courses could be given in any four, that is one each year.

The above scheme calls for recitations in five subjects, two in languages and one each in history, mathematics, and the sciences. It is not necessary that each of these classes recite daily, and in this case there might, in the judgment of some, be room for an additional study to be elected from any of the courses. This election, if offered, ought not to be required but should be at the option of the brighter pupils

who feel able to carry an additional subject. This would give the opportunity for French or German in addition to the Latin, or both French and German instead of the Latin or other combinations.

To sum up, all pupils are to be required to study language, history, mathematics, and the sciences, and the election, if any, is to be limited to the various studies in the different groups. That is, no one is to be allowed to omit entirely any one of the four groups. A pupil might prefer to take three classes in language and two in science, and thus omit all history and mathematics, or he might take the five from history, mathematics, and science, and omit all language and so for other combinations. Such selections will be positively forbidden by the proposed limitation.

Having completed the course thus outlined, the young man will be ready to enter upon his college work with a trained and disciplined mind, or if he does not enter upon a higher course, he is certainly equipped beyond the ordinary to enter upon the practical pursuits of business life.

Coming to the second part of the question as to the limitation of electives in the college, while there may be a somewhat broader application of the principle enunciated, yet the principle of the whole ought to be the same. An examination of a large number of catalogues of our southern colleges and universities shows in all instances a much wider field of election now than in the past. We find almost universally the two degrees of bachelor of arts and bachelor of science and in many institutions the additional degrees of bachelor of letters and bachelor of philosophy. Here is an election at the very start, and after the course for the special degree has been decided upon, we find further electives within the courses themselves, an election within an election. In most cases this begins with the freshman year and becomes farther reaching in each succeeding year. One college requires only two studies each in freshman and sophomore years, the rest being elective. Another has four groups leading to bachelor of arts and three leading to bachelor of science, and in each one of these groups from one fourth to one half is elective. This may be an extreme case, but it shows the tendency. Evidently some limitation is necessary unless we are going to adopt the plan of prescribing nothing except a certain number of hours.

If it be granted that we must have both bachelor of arts and bachelor of science, the choice between these two ought to be sufficient election for the freshman and sophomore years. In each one of the

two courses the limitations proposed for the schools ought to be effective for the first two years, with the legitimate difference that in the work for the bachelor of arts degree language and history may be made the predominating two of the four divisions; and in the bachelor of science degree, mathematics and science, but allowing none of the groups to be selected to the total exclusion of any other.

The advisability of granting much election to freshmen and sophomores is questionable. There being two distinct courses, literary and scientific, it might be possible to prescribe studies without any election. If this be deemed advisable, proposed courses might be as follows: In freshman literary, English, Latin, mathematics, history, and physics; in freshman scientific, English, French or German, mathematics, biology, and physics. In the sophomore years these studies would be continued except that physics would be replaced by chemistry. The history of the literary course might be substituted by Greek. Such an arrangement, if not too conservative, would be in close harmony with the plan outlined for the schools and would be a continuation of the work begun therein. If this is too narrow, and the difficulty of meeting the wishes of all is realized, modifications would be necessary, but we would still insist on each one of the four groups, language, history, mathematics and science, being represented. If this plan has been operative through the four years of school and the first two years of college, then the last two years may, with greater propriety, be made freer, and the student may begin to specialize. By this time he has reached a maturer age and besides the greater mental development, he has had the opportunity of testing what in the beginning appeared to him as strong likes or dislikes. Yet even here the door ought not to be made wide open. Some limitation is still desirable. There is still some danger, though not so great, of the student becoming too narrow. The subjects now to be studied might be grouped under the two broad heads of literature and science, and neither ought to be studied to the complete exclusion of the other. One institution in both junior and senior years grants an election of five studies out of twelve. Now five things can be selected from twelve in 792 different ways. It would, then, be possible to have 792 students and no two doing just the same work. This is probably in harmony with the view of those who maintain that as each mind is different so the training of each should be different. If the student has elected to be a chemist, for example, shall he in these last two years study nothing but chemistry? Ought he not to have modern

languages or other sciences? Shall the future political economist now study nothing but economics? Some of the latest books on this subject draw freely from mathematics for illustration. And so on for others. No one ought to shut himself up with his favorite pursuit and close the doors to outside knowledge. The true conception of the worth of these last two years will still demand of the student, though in less degree, some of both literature and science. The literary man must not be unscientific in his thought, nor the scientific man unpolished and uncultured in his work.

The determination of how much literature and how much science is the proper distribution for these two years in both courses is difficult and must be left to the different faculties.

THE PROPER LIMITATIONS OF THE ELECTIVE SYSTEM OF COLLEGE STUDIES

BY G. W. MILES

America has been called a wasteful nation, but of all our wastefulness, we waste more boys than any other product. There is an utter lack of intelligent system in the minds of the American people regarding the proper way in which to educate a boy, and the courses of study that should be prescribed for him. We find men in this country sitting in their back offices, in a purely commercial atmosphere, upon whom rest the sacred obligation of parentage, and flippantly, ill-advisedly, and dogmatically blocking out a plan of education, or course of study, for their sons, and usually capping it with the remark "that if he don't like that I will put him to work," and the result is that a young life is forced to grind up its seedcorn in routine business that should have been planted to bring forth an hundred-fold fruitage in his subsequent life.

Now a company of teachers, such as this assemblage here, may arrange its courses of academic studies, but the attractiveness of those courses and the steady compliance with them depends upon the American parent and the American home. This is the starting point, and without coöperation there and a fully cultivated mind our system and our theories must fall to the ground. It is easy enough to reconcile the difference between the curriculum courses and the elective courses, provided the education of a child is made a living issue and holy passion in the home from the very day of his birth.